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NOTICE OF ALLOWANCE AND FEE(S) DUE

7590 05/27/2009

Crowell & Moring
Intellectual Property Group
1001 Pennsylvania Avenue NW
Washington, DC 20004-2595

EXAMINER

SHECHTMAN, SEAN P

ART UNIT

PAPER NUMBER

2121

DATE MAILED: 05/27/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/507,520

04/06/2005

Hitoshi Onizawa

056205.55398US

1159

TITLE OF INVENTION: AUTOMOBILE MANUFACTURING LINE INPUT ORDER PLANNING APPARATUS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	08/27/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

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05/27/2009

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Intellectual Property Group
1001 Pennsylvania Avenue NW
Washington, DC 20004-2595

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

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nonprovisional

NO

\$1510

\$300

\$0

\$1810

08/27/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
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SHECHTMAN, SEAN P

2121

700-100000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

1 _____

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☐ Issue Fee

☐ Publication Fee (No small entity discount permitted)

☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

☐ A check is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 290 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 290 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	10/507,520	ONIZAWA ET AL.	
	Examiner	Art Unit	
	Sean P. Shechtman	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/6/09.
2. ☒ The allowed claim(s) is/are 1,5 and 14.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

The claims have been amended as follows:

Referring to claim 5, line 2,

-- 1 -- has been inserted, replacing "4"

Specification

2. Objections withdrawn.

Claim Objections

3. Objections withdrawn.

Claim Rejections - 35 USC § 112

4. Rejections withdrawn.

Claim Rejections - 35 USC § 102

5. Rejections withdrawn.

Allowable Subject Matter

6. Claims 1, 5, 14, are allowed.

The following is an examiner's statement of reasons for allowance:

While Daferner teaches, a building sequence planning system/method for an automobile production line: an input unit for inputting vehicle information of vehicles to be manufactured (page 20, paragraph 2-4; Page 10, paragraph 5), a processing unit for deciding an optimum building sequence based on the vehicle information inputted through said input unit (Page 20, paragraph 2-4), and an output unit for externally outputting a building sequence schedule decided by said processing unit (Page 21, paragraph 1), wherein said processing unit includes an initial offline sequence preparing unit for preparing an initial vehicle building sequence of the automobile based on the vehicle information inputting said input unit, an initial lead-time developing unit for developing the building sequence to preceding and succeeding processes by lead-time shifting for the automobile production line prepared by the initial vehicle building sequence prepared by said initial offline sequence preparing unit, a sequence evaluating unit for evaluating the building sequence based on conditions of an occupancy rate level, a minimum interval vehicle number, a maximum succeeding vehicle number, and a lot condition, as a penalty value, in accordance with restriction conditions, an offline point sequence preparing unit for preparing another pattern of the vehicle building sequence at the offline point, an evaluation determining and storing unit for deciding a building sequence with a minimum penalty based on the penalty value evaluated by said sequence evaluation unit; wherein said sequence evaluating unit evaluates the building sequence for the mixture line, which is prepared by said initial lead-time developing unit, as a penalty value based on a sum of satisfying degrees, at all the points where the lead-time shifting has been done (Page 19, paragraph 3 – Page

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20, paragraph 1), a lead-time developing unit for developing the building sequence at the offline point for another pattern of the vehicle building sequence prepared by said offline sequence preparing unit by using a lead-time shifting by employing the number of vehicles residing or accumulated between two processes, and wherein said processing unit propagates the building sequence in a point in the automobile production line between two processes in the automobile production line, which corresponds to an assembly completion point, to preceding and succeeding processes with lead-time shifting by employing the number of vehicles residing or accumulated between two processes, thereby deciding an optimum building sequence for each of the preceding and succeeding processes (Page 13, paragraph 1; Page 11, paragraph 2, shifting of orders 3, 4, 5 for air conditioning assembly team to be at least 50 clock cycles apart, thereby shifting the time for which the processing of orders 3, 4, 5 will be completed thereby shifting the lead-time).

And, Bergeon teaches a building sequence planning system/method for an automobile production line, said system/method comprising: an input unit for inputting vehicle information of vehicles to be manufactured (Col. 2, lines 55-62), a processing unit for deciding an optimum building sequence based on the vehicle information inputted through said input unit (Col. 2, lines 62- Col. 3, lines 45), and an output unit for externally outputting a building sequence schedule decided by said processing unit (Col. 3, lines 15-32), wherein said automobile production line is a mixed line including a first line and a second line respectively in parallel, and a third line branching from said first line and joining with said first line or said second line (Cols. 1-8), wherein said

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processing unit includes an initial offline sequence preparing unit for preparing an initial vehicle building sequence of the automobile based on the vehicle information inputting said input unit (Col. 3, lines 3-14), an initial lead-time developing unit for developing the building sequence to preceding and succeeding processes by lead-time shifting for the automobile production line prepared by the initial vehicle building sequence prepared by said initial offline sequence preparing unit (Col. 3, lines 3-14), a sequence evaluating unit for evaluating the building sequence based on conditions of an occupancy rate level, a minimum interval vehicle number, a maximum succeeding vehicle number, and a lot condition (Col. 3, lines 19-23), as a penalty value, in accordance with restriction conditions (Col. 5, line 48 – Col. 6, line 6), an offline point sequence preparing unit for preparing another pattern of the vehicle building sequence in an offline process (Col. 5, line 48 – Col. 6, line 6), an evaluation determining and storing unit for deciding a building sequence with a minimum penalty based on the penalty value evaluated by said sequence evaluation unit, wherein said sequence evaluating unit evaluates the building sequence for the mixture line, which is prepared by said initial lead-time developing unit, as a penalty value based on a sum of satisfying degrees, at all the points where the lead-time shifting has been done (Col. 5, line 48 – Col. 6, line 6); wherein said processing unit prepares a vehicle building sequence, determines a degree of dissatisfaction of the prepared building sequence, as a penalty value, in accordance with restriction conditions which are inputted through said input unit and are imposed when building the vehicles into work (Col. 2, lines 48-65; Fig. 2, element 44; Col. 5, lines 47 – Col. 6, line 6), the restriction conditions including leveling in

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distribution of vehicles having the same specifications, a minimum building interval of vehicles having particular specifications, and a maximum succeeding vehicle number and a minimum succeeding vehicle number in successive building of the vehicles when the number of vehicles successively loaded is taken into consideration (Col. 3, lines 19-23), and decides a building sequence with a minimum penalty by preparing a plurality of building sequences and determining the penalty value for each building sequence with respect to the restriction conditions (Col. 5, line 48 – Col. 6, line 6), and a lead-time developing unit for developing the building sequence at the offline point for another pattern of the vehicle building sequence prepared by said offline sequence preparing unit by using a lead-time shifting by employing the number of vehicles residing or accumulated between two processes, and wherein said processing unit propagates the building sequence in a point in the automobile production line between two processes in the automobile production line, which corresponds to an assembly completion point, to preceding and succeeding processes with lead-time shifting by employing the number of vehicles residing or accumulated between two processes, thereby deciding an optimum building sequence for each of the preceding and succeeding processes (Col. 5, line 48 – Col. 6, line 6).

Neither Daferner nor Bergeon, taken either alone or in obvious combination disclose a building sequence planning system for an automobile production line having all the claimed features of applicant's instant invention, specifically including:

“wherein said automobile production line is a mixed line including a first line and a second line respectively in parallel, and a third line branching from said second line and joining with said first line,

wherein said processing unit includes an initial offline sequence preparing unit for preparing an initial vehicle building sequence of the automobile production line based on the vehicle information input to said input unit, and operates to output said optimum building sequence by (i) calculating an evaluation value from the vehicle information, including an initial automobile building sequence, input to said input unit, and storing the evaluation value, (ii) calculating a new evaluation value from another, new automobile building sequence, (iii) comparing the new evaluation value with the stored evaluation value, (iv) adopting the new automobile building sequence when the new evaluation value is improved, (v) discarding the new automobile building sequence when the new evaluation value is not improved, (vi) ending processing when repetitive searches have been completed, and (vii) outputting a most recently adopted automobile building sequence as said optimum building sequence”.

It is for these reasons that applicant's invention defines over the prior art of record. Claims 5 and 14 depend from claim 1 and are therefore also allowable. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean P. Shechtman whose telephone number is (571)272-3754. The examiner can normally be reached on 9:30am-6:00pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SPS
Sean P. Shechtman
May 22, 2009

/Sean P. Shechtman/
Primary Examiner, Art Unit 2121